DOCUMENT RESUME

ED 157 637 PS 010 071

AUTHOR	Bronfenbrenner, U.; And Others
TITLE	Day Care in Context: An Ecological Perspective on Research and Public Policy. (Revised Edition).
SPONS AGENCY	Department of Health, Education, and Welfare, Washington, D.C. Office of the Assistant Secretary for Planning and Evaluation.
PUB DATE	Jun 77
NOTE	67p.; For related documents, see ED 149 861 and PS 009 986 - PS 010 006
EDRS PRICE	MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS	*Child Development; Cognitive Development; *Day Care Services; Early Childhood Education; *Family Relationship; Family Structure; Historical Reviews; *Literature Reviews; Parent Child Relationship; *Public Policy; Research Methodology; Social Development; *Social Structure

ABSTRACT

This paper presents an analysis of day care research and practice in the United States from an ecological perspective, examining the impact of day care on the family and society as well as on the child. Part I contains a summary of major conclusions regarding substantive findings of existing day care research and a statement of policy recommendations in the light of available knowledge. Changes in the structure and position of the American family in recent decades are traced and concomitant changes occurring in the development of children are examined. Existing research on day care is analyzed with two considerations in mind: the strengths and limitations of the scientific findings as indicators of the direct effects of day care on child development, and the significance of the existing research for understanding the broader effects of day care. Part II contains the background data and analyses underlying the conclusions presented in Part I. Specific areas examined include: (1) cognitive development, (2) mother-child relationship, (3) social development, and (4) effects of day care on the family. (JMB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED157637

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

DAY CARE IN CONTEXT:

AN ECOLOGICAL PERSPECTIVE ON RESEARCH AND PUBLIC POLICY

U. Bronfenbrenner, J. Belsky, & L. Steinberg
Cornell University

December 1976

(Revised - June 1977)

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

William R. Prosser

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

PS010071

A review prepared for the Office of the Assistant Secretary for Planning and Evaluation, Department of Health, Education, and Welfare. We would like to express especial appreciation to Dr. Henry Ricciuti for kindly permitting us to use his detailed abstracts of many of the investigations cited in this paper.

Table of Contents

	Page
Introduction	1
Part I: Principal Findings and Policy Implications	3
The Changing American Family	3
Contemporary Day Care Research: The Major Findings	6
Unresearched Issues in Day Care	15
Policy Implications	17
Part II: Research Documentation and Analysis	21
Cognitive Development	21
The Mother-Child Relationship	30
Social Development	43
Effects of Day Care on the Family	50
Footnotes	56
References	57

DAY CARE IN CONTEXT:

AN ECOLOGICAL PERSPECTIVE ON RESEARCH AND PUBLIC POLICY

U. Bronfenbrenner, J. Belsky, & L. Steinberg
Cornell University

Introduction

In the document that follows, we present an analysis of day care research and practice in the United States from the perspective of the ecology of human development. This analysis, in turn, points to the need for substantial reorientation, expansion, and, especially, innovation in prevailing policies and programs.

The document consists of two parts. In Part I, we present a summary of major conclusions regarding substantive findings of existing day care research, and a statement of our policy recommendations in the light of the available knowledge. Part II contains the background data and analyses underlying the conclusions presented in Part I.

Our conclusions, both with respect to facts and public policy, are based as much on what we don't know as on what we know, for our analysis reveals that existing day care research and practice are peculiarly narrow in scope. In particular, they fail to take into account the critical role, both present and potential, of day care in relation to the profound changes occurring in American society over recent decades, changes that threaten the well being of the nation's families, and the development of children and youth. To date, research on day care has been conducted without reference to these broader and more consequential concerns. The part that day care does or could play in counteracting, accelerating, or otherwise influencing the foregoing changes has remained unexamined. Let alone exploring these broader dimensions, day care research has yet to go beyond its own doors to ask about effects on

the children's parents, especially those having to raise a family under difficult circumstances (for example, low income status, single-parenthood, illness, etc.).

The scope of such as-yet-unexamined issues raises some question about the recent, widely publicized flurry of findings suggesting that raising children in day care vs. home care makes little difference. These findings reflect the important but nonetheless narrow focus of contemporary day care research; namely, investigations are confined to and almost never go beyond direct effects on the child. Moreover, as we shall indicate, even within this restricted sphere, the research findings are severely limited by selectivity of sampling and, even more critically, by the circumscribed context and often artificial character of the behaviors assessed.

Yet, paradoxically, from an ecological perspective it is the impact of day care beyond the child himself, on the nation's families and the society at large, that may have the more profound consequence for the development of the next generation of Americans. To understand the nature of this process requires an appreciation of the changes that have taken place in the structure and position of the American family in recent decades, and of concomitant changes occurring in the development of children. Following this examination, we proceed to an analysis of existing research on day care with two considerations in mind: first, the strengths and limitations of the scientific findings as indicators of the direct effects of day care on child development; second, the significance of the existing research for an understanding of the broader effects of day care on the family and the society at large.

Part I

Principal Findings and Policy Implications

The Changing American Family

One of the authors of this report, in connection with his responsibilities as a member of the Advisory Committee on Early Child Development of the National Academy of Sciences, has carried out analysis of all data available from the U. S. Census and other sources bearing on American families and children for the period from World War II to the present time (Bronfenbrenner, 1975; Toward a National Policy for Children and Families, 1976[1]). What these data reveal is progressive fragmentation and isolation for the family in its child rearing role. To begin with a familiar fact, every year more and more mothers are going to work, now over half of those with school age children, over one-third with children under six, and one-third with infants under three; two-thirds of all those mothers are working full-time. A second change accompanies the first. As many more mothers go to work, the number of adults left in the home who might care for the child has been decreasing in two ways. First, what sociologists call extended families, those that contain other adult relatives besides the parents, have been gradually shrinking and disappearing. But shrinkage and disappearance have been even more pronounced in the so-called nuclear family consisting of mother, father, and children. Today, more than one in every six children under eighteen is living in a single-parent family, with the one parent generally also being the head of the family and holding down a job, usually full-time. This is often not a temporary state, since, on a national scale, the remarriage rate, especially for women, is substantially lower than the rate of divorce in families involving children, and this differential has been increasing

over time. A significant component in the growth of single-parent families has been a sharp rise in the number of unwed mothers; more young women are postponing the age of marriage, but some of them are having children nevertheless.

All of these changes are occurring more rapidly among younger families with small children, and increase with the degree of economic deprivation and urbanization, reaching their maximum among low income families living in the central core of our largest cities. Although levels of labor force participation, single-parenthood, and other related variables are substantially higher for blacks than for whites, those families residing in similar economic and social settings show similar rates of change. The critical factor, therefore, is not race, but the conditions under which the family lives. But the general trend is not limited to the urban poor. It applies to all strata of the society; middle class families in cities, suburbia, and rural areas are changing in similar ways. Specifically, in terms of such characteristics as the proportion of working mothers. number of adults in the home, single-parent families or children born out of wedlock, the middle class family of today increasingly resembles the low income family of the early 1960's.

What are the implications of these trends? What does it mean for children that more and more mothers, especially mothers of preschoolers and infants, are going to work, the majority of them full-time? What does it mean that, as these mothers leave for work, there are also fewer adults in the family who might look after the child, that in ever more families there is only one parent, who is usually also the breadwinner, and working full-time?

Paradoxically, the most telling answer to the foregoing question is yet another question: Who cares for America's children? While estimates of specific numbers differ (Child Care Data and Materials, 1974; TNPCF, 1976), all serious students of the problem agree that existing facilities for the substitute care of children fall far short of the need. As used here, the term "need" refers to an objective situation in which there are no adequate facilities for the care of the child. For example, in 1974, there were approximately 1.3 million children under school age in licensed or approved day care centers, Head Start programs, and family day care (TNPCF, 1976). In addition, the Bureau of the Census reports 4.2 million children enrolled in nursery school and kindergarten (U. S. Bureau of the Census, 1974). This makes a total of 5.5 million places. Yet, if one considers only those children whose parents work and hence cannot themselves care for the child, their estimated number is 7.2 million (TNPCF, 1976). Of this total, approximately 1.7 million, or 23%, are children of single parents.

The foregoing figures pertain only to children under six years of age. In addition, there are uncounted[2] numbers of school age youngsters, so-called "latch-key children," who come home to empty houses, and who, in all probably, contribute far out of proportion to the ranks of pupils with academic and behavior problems, who have difficulties in learning to read, or who are drop-outs, drug users, and juvenile delinquents.

But these outcomes can only be matters of speculation. Unfortunately, statistics at a national level on the state of children are neither as comprehensive nor as complete as those on the state of families. In our census

data, it is the taxpayer who counts, and gets counted. There is lots of information about adults; much less about children. Nevertheless, the available data do suggest a pattern that strikingly parallels the trend observed for changes in the family. Specifically, concomitant and consistant with shifts in the structure and position of the family are changes in indices reflecting the impaired well being and development of children. Youngsters growing up in low income families are, of course, at especially high risk of damage physically, intellectually, emotionally, and socially. But, the evidence also reveals disturbing secular trends, indicated by declining levels of academic performance and rising rates of child homicide, suicide, drug use, and juvenile delinquency (Bronfenbrenner, 1975; Harnischfeger & Wiley, 1975; TNPCF, 1976).

We cite the foregoing statistics on American families and children because, in our view, any responsible assessment of research and policy on day care must take into account the major changes that have been taking place in recent decades. In particular, the question must be raised whether existing day care policies and practices serve to counteract, contribute to, or otherwise influence the trends we have documented, and what modifications, if any, are needed to reverse, or at least to decelerate, the prevailing forces of disintegration.

As a first step in pursuit of answers to these questions, we examine the results of existing studies of day care.

Contemporary Day Care Research: The Major Findings

Over the past ten years, research on day care has increased substantially in volume, but, as we have already noted, has remained surprisingly narrow in

scope. In consequence, while a description of the studies that have been conducted requires a good deal of space, the results can be summarized in relatively brief compass. Accordingly, rather than burden the reader at the outset with the full account, analysis, and documentation of the researches we have reviewed, we relegate this material to the second part of the document, and proceed to a summary of the major findings as a prelude to an exposition of what we see as their policy implications.

The findings are drawn from over 40 studies that, in turn, were selected from a much larger number on the basis of their scientific quality. Specifically, we included for review only those investigations that employed reliable measurement techniques in the context of an experimental design permitting some control over possibly confounding factors. Nevertheless, despite these methodological requirements, the selected studies are subject to a number of scientific limitations characteristic of contemporary work in the field. Before proceeding to our substantive conclusions, we therefore call attention to these qualifying features.

1. Scientific Limitations of Existing Research on Day Care. Four types of shortcomings require consideration:

   a. Restriction to high quality, center-based care. To an overwhelming degree, research on day care has been conducted in university-based or university-connected centers with high staff-child ratios and well-designed programs directed at fostering cognitive, emotional, and social development. Yet, most of the day care available to the nation's parents is not of this character. For example, among children six years

of age or under, the most common type of substitute care (other than by a relative) is by a babysitter in one's own home (26%); next in order is care of the child in someone else's home, including family day care (16%); nursery or preschool account for 8%, and center care for no more than 3% (National Child Care Consumer Study: 1975, Vol. II, Table IV-9). Ironically, the extent of our knowledge about the effects of substitute care varies in the reverse order, with the most information available about center care and nursery or preschool programs; only a few studies deal with family day care, and virtually no data are available about the effects of leaving children with a babysitter for extended periods of time.

Moreover, as noted above, virtually all of the existing research is based on day care of high quality. Yet, in the only study to date assessing the quality of day care (Keyserling, 1972), the majority of nonprofit and, especially, of proprietary centers were judged as inferior. Specifically, of 280 nonprofit centers visited, only 38% were evaluated as "good" or "superior," 51% as "fair," and 11% as poor. Of 103 proprietary centers, only 15% rated in the top two categories, and 50% were designated "poor" (Table 31). Hence the findings from existing research on day care cannot be generalized to the kind and quality available to most of the nation's families.

b. Restriction to immediate effects. With a single exception (Moore, 1975), there are no follow up studies of children exposed to home vs. day care beyond the preschool years. Hence, it is entirely possible that such differences as have been reported may disappear with time, or, conversely, as Moore suggests, that "sleeper effects" may emerge at later age levels.

c. Comparability of samples. The third issue that arises concerns the comparability of family backgrounds among children exposed to day vs. home care. Any attempt to assess the effect of day care by comparing children reared at home with those reared in day care requires that these two groups of children come from similar circumstances. Yet, recent research (Hock, 1976; Sibbison, 1973) indicates that families using day care differ in several respects from families rearing their children at home (for example, in attitudes toward the maternal role, not to mention toward day care itself). This methodological problem could be readily solved if children were assigned on a random basis to home vs. day care experiences, but, given the constraints of the real world, such a solution is quite rare in practice. In fact, we have been able to find only a single study in which random assignment has been possible (Ramey & Mills, 1975).

Two other investigators, however, have overcome this difficulty without random assignment. By selecting their non-day care samples from center waiting lists, Cochran (1976) and Peters (1973) were able to assure that their comparison groups were equivalent with respect to the critical variable

of motivation to use day care. These two studies are important because they demonstrate that carefully designed field research can take advantage of natural experiments with natural controls.

The necessity of controlling for motivation highlights the problems of adequacy of controls when random assignment and waiting list procedures are not utilized. This state of affairs obtained for all of the research we have reviewed, with the exception of the three studies mentioned above. Since evidence does indicate that users and nonusers of day care are not comparable, and since research reveals that family attitudes and values influence child rearing (e.g., Kohn, 1963), and thus affect the course of development, there is need to assure comparability on those variables that are most likely to differentiate users and nonusers of day care.

d. Ecological validity. A fourth and even more pervasive issue refers to the extent to which the obtained results can be generalized beyond the often artificial settings and activities typically employed to assess children's development. As we have argued elsewhere, much of contemporary developmental psychology can be described as "the science of the strange behavior of children in strange situations with strange adults for the briefest possible period of time" (Bronfenbrenner, 1977). Even the most cursory examination of day care research indicates that this sphere of developmental psychology is no exception. As we document in Part II of this report, most studies on the effects of day care utilize either laboratory

experiments, or psychological tests. In each instance, the generalizability of the results to behavior in the real-life settings of home, neighborhood, preschool, and school can be, and has been, seriously questioned (Bronfenbrenner, 1977; Lewis, 1973; Riegel, 1975; Sroufe, 1970; Tulkin, 1972). For example, in a review of experiments with children conducted both in the laboratory and in the home, Bronfenbrenner (1976 , 1977) found that the former setting tended to increase anxiety and other negative feeling states, and to decrease manifestations of competence and cooperation. In addition, laboratory experiments were more likely to yield social class differences in the behavior of the parent.

The use of psychological tests, particularly with children from minority groups and disadvantaged socioeconomic backgrounds, has been subject to even more severe criticism (e.g., Baratz & Baratz, 1970; Sroufe, 1970; Tulkin, 1972). Since many studies of day care have employed children from such backgrounds, the issue is a particularly pertinent one.

Although acknowledging the serious limitations of laboratory experiments and psychological tests on grounds of ecological validity, we have nevertheless utilized research results obtained with such methods as bases for some of our conclusions. We justify this procedure on the following grounds.

Whereas laboratory and test measures have yielded group differences not reflected in the child's behavior in familiar situations and tasks (Bronfenbrenner, 1976, 1977), it seems to us that any failure to find differences in the relatively more stressful scientific situation might offer some assurance that little variation will be present in less threatening settings of everyday life. It is only when techniques of unknown ecological validity indicate differences between children exposed to different modes of care that the implications for real-life setting remain in doubt.

2. Specific Results. With the foregoing considerations in mind, we turn to findings of day care research in three major spheres of development: cognitive, emotional, and social.

a. Cognitive development. As previously noted, the effects of day care upon the intellectual development of the child have been extensively researched but almost exclusively with children enrolled in well-funded, high quality, university-based programs, often conducted with the specific goal of providing "cognitive enrichment." Data from such programs suggest the following conclusions.

1) For children living in average, low-risk socioeconomic circumstances, experience in programs that meet current federal and state regulations is unlikely to affect, either positively or negatively, the child's intellectual development as measured by standardized intelligence tests. Improving the quality of programs above current minimal standards does not appear to facilitate intellectual development for children from these backgrounds.

2) For children from higher risk environments, good quality day care may attenuate the declines in test scores frequently observed in youngsters from disadvantaged backgrounds.

3) The effects on the child's intellectual development of day care that is not of high quality remains unknown. The statement applies to all forms of care including center care, family day care, or care by someone other than a parent in the child's own home.

b. Emotional development. Investigations in this sphere have focused primarily on the question of whether day care disturbs the mother-child relationship. Most of the research has been conducted in the laboratory rather than in the home, the day care setting, or other real-life situations. In the light of the evidence that the laboratory is an anxiety-arousing milieu for both mother and child (Bronfenbrenner, 1976 , 1977), one would expect any disruption in the mother-infant bond to be exacerbated under such circumstances. It is significant, therefore, that carefully controlled studies have shown few differences in children's response to separation from the mother as a function of exposure to day care. Nor is there any indication that such exposure decreases the child's preference for the mother versus an alternate caregiver.

As before, however, the above findings are limited in their generalizability, since only day care programs of high quality were studied. We do not know what effect, if any, average or poor day care programs have on the relationship between mother and child.

c. Social development. . In this sphere, day care research has again been restricted in scope, focusing primarily on the child's capacity to "get along" with age-mates. A secondary line of investigation on the significance of day care for so-called "social maturity" is flawed by excessive reliance on diffusely defined rating scales employed with inadequate attention to rater bias, particularly on the part of judges identified with particular program objectives. With due regard for these limitations, we believe the following conclusions are indicated:

1) Effects on social behavior and development as a function of mode of care are restricted to differences associated with center care, on the one hand, versus either family day care or home care on the other. Moreover, there are indications that some of these effects may be culture-bound; that is, specific to center care as conducted in the United States.

2) Compared to youngsters raised at home, children with day care experience interact more with their peers in both positive and negative types of behavior. These effects endure at least through the early years of elementary school.

3) Results of several studies suggests that exposure to center care, particularly in the early years "may slow acquisition of some adult cultural values" (Schwarz et al., 1974, p. 502). The relevant data indicate that children enrolled in day care for extended periods show higher levels of insecurity and dependency, increased aggression both toward peers and adults, and

decreased cooperation and involvement in educational activities once the child enters school.

4)Such outcomes, however, do not appear to be characteristics of day care programs in other countries, nor of all centers studied in the United States. Rather, they seem to be products of certain kinds of program emphases more common in this nation than elsewhere and reflect the special character of children's peer groups in America, which are distinguished by a stress on autonomy, individualism, freedom of expression, competition, and permissiveness toward and encouragement of interpersonal aggression.

Unresearched Issues in Day Care

Especially from the perspective of public policy, the foregoing summary of existing research on day care is as significant for what it omits as what it includes. So that the reader may be aware of the scope of important questions that remain unanswered, we present an outline of them here.

1. The content and impact of different types of day care. In the research to date, both day care and home care have been treated as relatively homogeneous, undifferentiated entities. Little attention has been paid to the nature and differential impact of variations such as the following:

a. High quality vs. run-of-the-mill vs. poor quality care;

b. Center care vs. family day care vs. care in own home by relatives vs. nonrelatives vs. informal care outside the home by friends and neighbors (cf. Collins, 1973; Emlen, Donoghue and Clarkson, 1974);

c. Part-time vs. full-time care;

d. Custodial vs. developmental day care;

e. Early entry vs. late entry;

f. Duration of the day care experience (often confounded with time of entry, e.g., Brownlee, 1977).

2. The impact of day care on the child's behavior in other real-life settings. Almost no information is available on the effect of day care on the behavior of the child at home, or on later performance and behavior in school.

3. Socialization effects. Of particular importance for later development is the question of whether day care affects the child's responsiveness to adults, his or her ability to use adults as resources, and the development of the child's capacity to carry responsibility and function effectively in difficult real-life situations.

4. The significance and effects of day care for parents. For example, to what extent does day care influence:

a. The parents' perceptions of expectations toward, and treatment of, the child;
b. The parents' perceptions of their own role as parents;
c. Parental adult education and job training;
d. Parents' performance on the job;
e. Parental careers;
f. Parents' social life.

5. The significance and effects of day care on the family as a whole. Particular aspects include:

a. The family's financial situation;
b. The family's social network (e.g., acquaintance with other families, patterns of mutual help and emotional support);
c. The family's capacity to raise its other children;
d. Family tension, conflict, and disruption (e.g., separation or divorce).

6. The differential significance and impact of day care for families living in different circumstances. For example:

   a. Low vs. middle income families;

   b. Single- vs. two-parent families;

   c. Families with one vs. two parents in the labor force;

   d. Families under stress (e.g., serious illness, physical handicap, inability to find work, etc.).

7. The impact of day care in and on a changing society. Some major issues include:

   a. The economic consequences of day care in enabling more women to enter the labor force;

   b. Consequences of day care for the family as a childrearing institution (for example, does day care as presently conducted and presented to the public contribute to abdication of the parental role?).

Policy Implications

The restricted focus of day care research is paralleled by an equally limited perspective on policy issues. Thus the questions raised by policy ma typically concentrate on the immediate impact of day care directly on the chi with little regard to effects on the family or the society at large. For example, the concerns usually expressed in discussions and documents dealing with day care policy tend to focus on such questions as the minimum age for entering a child into day care, or the specification of safety requirements and adult-child ratios. These are of course matters of importance, but they do not begin to address the range of policy issues requiring serious consider

For example, they hardly speak to the primary concern of parents in seeking and selecting substitute care; namely, the availability of a well trained, dependable, warm and loving caregiver (National Child Care Consumer Study: 1975, Tables V-6,7,8,).

The full scope of relevant policy problems is ironically reflected in the outline of areas of needed scientific knowledge appearing in the preceding section. As we have argued throughout this document, the fact that such knowledge does not yet exist itself carries implications for public policy. Specifically, in the absence of reliable and valid information about the consequences of different types of care, we believe that government action in this field should be guided by the following general principles:

1. The types of services provided should be responsive to the expressed needs of the nation's parents as they perceive them.

2. Since perceived needs are likely to vary substantially for families in different circumstances, a wide range of options should be made available.

3. These available options should not be limited, as they presently are, to center care or family day care, and should be extended to include support for arrangements for care by relatives, friends, or even by members of the immediate family, including the parents.

4. In view of the extensive gaps in knowledge about the broader effects of day care, Federal research policies should be modified to give priority to scientific studies that go beyond the narrow scope of substance and method that now characterizes work in this area.

5. In the absence of objective data on the effects of different types of day care, the persons most appropriate and best qualified for evaluating available services are the child's own parents. In order to make such an

evaluation, however, parents need information about the nature of the program, including an opportunity to observe it in operation. This principle should be implemented in public policy by requiring all child care services receiving Federal funding to provide parents with the information and opportunity necessary to make a knowledgeable assessment of the program. Specifically:

a. The program should be described in written materials and talks made available to the parents. Such descriptions should include some indication of objectives, activities, rules, discipline techniques, etc. This stipulation is analogous to the requirement of labeling imposed by the Food and Drug Administration.

b. Parents should be afforded repeated opportunities to visit, observe the program in operation, talk with caretakers, ask questions, and make suggestions.

6. To assist parents in making informed choices about substitute care, the Federal government should provide a handbook outlining areas of needed information, questions the parents should ask, etc.

7. To encourage the development of a wide range of services appropriat to the differing needs of families in different circumstances, the Federal government should keep to a minimum the specification of program criteria. Instead, groups of parents should be encouraged to develop plans for service that appear appropriate for meeting their needs. From this point of view, day care standards should be addressed not to the particular forms that child care services should take or the setting in which they are delivered, but rather to the process through which plans for such services are develope

For example, one might specify that the planning group include a majority of parents, at least one physician, one person from the lowest level of local government, a representative of the schools, etc. The actual form of care provided might vary from established modes of center care and family day care to cooperative arrangements, or even direct payment to permit parents to care for their own children at home.

8. The persons best qualified to monitor the quality of day care programs are the parents. Hence, opportunities must be available for parents to visit at any time, and to ask questions about the program. Where parental dissatisfactions cannot be resolved informally between parents and staff, grievance procedures should be established at the local level. The hearing board should consist of a majority of parents (excluding those affected), and be empowered to recommend withdrawal of Federal funds where programs fail to meet children's needs.

9. Finally, given the present forces in the society leading to the break up of families, it would be important to insure that forms of substitute care supported by the Federal government do not contribute to the derogation or abdication of parental roles. For this reason, we recommend that all programs supported by the Federal government involving the care of children by someone other than parents be required to disseminate information and provide instructions making clear that <u>day care can be an invaluable complement to but not a substitute for parents</u>, who remain the most important influence in furthering the development of the child.

Part II

Research Documentation and Analysis[3]

The material is presented in four sections corresponding to the major areas in which research has been conducted: cognitive development, the mother-child relationship, social development, the family.

1. Cognitive Development. The day care experience appears to have neither salutory nor adverse effects on the intellectual development (as measured by standardized tests) of most children. We shall see, however, that for economically disadvantaged children, high quality day care may have an enduring positive effect on these children's intellectual development in that the experience may attenuate the declines in test scores typically associated with high-risk home environments.

An overwhelming majority of studies of the effects of day care on subsequent intellectual development have indicated no differences between day care reared children and matched controls (Cochran, 1976; Doyle and Somers, no date: Kagan et al, 1976; Fowler and Khan, 1974, 1975; Saunders, 1972; Moore, 1975; Caldwell et al, 1970; Lewis, 1975; Prentice and Bieri, 1970). Brownlee (1977) does report higher IQ scores at 18 months for both center and family day care children than for matched controls, but the difference between their scores of only seven points, while statistically reliable, is of questionable functional significance. A number of these investigators had found initial gains in one or many test subscales (e.g., Fowler and Khan, 1974) but any significant differences between day care children and matched controls disappeared during the program or soon after termination.

It is interesting to note that this pattern appears in data both from day care programs emphasizing cognitive enrichment as well as those offering

essentially custodial services. The "washing out" of gains in enrichment programs has been documented by Bronfenbrenner (1974). Both he and others have argued that it is naive to expect children to be "inoculated" by an early intervention program against the negative impact of subsequent, less stimulating environments. Therefore, it comes as no surprise that most studies show no significant, long-term gains in test scores as a result of even high quality day care. We emphasize, however, that neither do any studies report losses in intellectual performance as a result of day care.

The foregoing conclusions must be qualified by the fact that the programs studied have been well-funded, generally university-based, and compliant with current federal and/or state guidelines for day care facilities. We simply do not have any evidence regarding development in poorly staffed or equipped centers or family day care programs.

Winett et al.(1974) cite some evidence that, within centers that do meet current guidelines, variations in quality (measured by a composite score based on staff ratio, staff experience, personnel turnover rate, ratings of caregiver-child interaction, and the physical plant) do not significantly affect performance on standardized intellectual tests. This suggests that intellectual development is not related to changes in quality of care in centers which fulfill certain minimum requirements. As we stated earlier, no research exists assessing the effects of programs falling below such standards.

A. Advantages for Disadvantaged Children

Significant positive effects of the day care experience on performance in standardized tests of intellectual development have been reported by a handful of investigators, and it is enlightening and encouraging to note a common factor which characterizes the results. These researchers have found

significant differences in IQ performance for those chidren who have been categorized as higher-risk than the average middle class child. It should be noted, too, that these programs were specifically designed to provide cognitive enrichment and varied widely in the type and degree of special enrichment provided for the children and families involved (cf. Robinson and Robinson, 1971; Heber et al, 1972). Lally (1973, 1974) for example, found that day care children from poorly-educated families performed better on the Stanford-Binet given under optimal conditions than did their matched home-reared counterparts, but that controls from well-educated families scored even higher than the matched day care group. More importantly, 29% of the low education home-reared group obtained an IQ below 90 on the test, while only 7% of the day care group did so;none of the high education controls scored in this range. Thus, an enriching day care experience may attenuate some of the adverse effects typically associated with high-risk environments.

Support for this conclusion is also provided in a series of reports by Ramey and his colleagues emanating from their longitudinal study of three group of children: (1) a high-risk experimental group enrolled in a specially designed cognitive enrichment day care program, (2) a high-risk, home reared control group matched to the experimentals on a number of important variables (e.g., social class, age, sex, race), and (3) a general population contrast group reared at home in more economically advantaged families. During the period 6-18 months, performance on the Mental Development subscale of the Bayley Infant Test declined for the high-risk controls (from 104 to 86) while it remained stable (near 104) for the high-risk experimentals (Ramey & Smith, 1976). In addition, motor development subscale scores on this same test re-

vealed significant differences between these two groups favoring the day care reared children. Moreover, these experimental children were not significantly different from children in the economically more advantaged, general population contrast group.

Campbell and Ramey (1977) further demonstrated that these patterns of decline in the level of functioning for the home reared, economically disadvantaged children and stability for their day care reared counterparts may continue into the child's third year. They reported that the high risk controls' mean Binet score dropped to 83 at 24 months and 81 at 36 months, while their day care counterparts' mean remained between 90 and 100 during this same time

period (94 at 24 months; 96 at 36 months). As noted earlier, it does not seem to be the case that the IQ scores of high risk children enrolled in day care increase as a function of their day care experience; rather, the evidence indicates that a specially designed day care experience may attenuate the decline in IQ typically found for children in disadvantaged populations (Golden & Birns, 1976).

These findings are consistent with the significant positive correlations between environmental stimulation and intelligence test scores reported by Fowler and Khan (1974, 1975). The high risk children enrolled in these special day care programs are presumably spending more time in more stimulating environments than are their home-reared counterparts. It is in fact the case that the IQ scores of non-day care children can be better predicted by maternal variables that can the scores of day care children. In attempting to predict 36 month IQ scores of day care and control children, Farran, Ramey and Campbell (1977) found that maternal variables at 18 months (attitudes, involvement with the child, and interaction in the laboratory) accounted for 83% of the variance in the home reared group but only 63% in the day care group. These authors also found that while "maternal IQ is a substantial predictor for the control children...it is not for the experimental (p.9).

Campbell and Ramey (1977) suggest also that differences in the testing behaviors of day care children and high-risk controls may account for some of the differences in test performance. They noted that at 18 months, the day care children were more cooperative and less fearful (as measured by the Infant Behavior Record of the Bayley Scales) and that at 36 months, the

controls were more anxious and withdrawn (as measured by the Kohn and Rosman Test Behavior Inventory). These authors concluded that "differences in ability to be at ease and to relate to unfamiliar adults might be partly responsible for the control children's relatively poor showing on the tests" (pp. 4-5). Thus, in attempting to account for intellectual differences between day care and non-day care children, it is necessary to consider differences between the children's social experiences as well.

B. Effects of Different Forms of Care

Two studies focused on differences between types of day care programs and intellectual test outcomes, but because of inadequate matching techniques do not provide clear evidence on this issue. Winett et al. (1974) reported that part-time day care children exceed full-time home-reared, center-reared and sitter-reared children on Peabody IQ scores, but this finding was confounded by the higher SES composition of the part-time group. Saunders and Keister (1972) found higher Bayley mental scores for children in group day care than in family day care one year after entry, but the children in these groups were not matched on SES.

The recent New York Infant Day Care Study (Brownlee, 1977) does, however, provide a well-matched comparison between group (center) and family day care children. In their first public report, Brownlee noted that during the child's first 18 months, "intellectual development does not appear to be differentially affected by the type of day care setting in which infants are placed.... The difference between group and family day care children in terms of intellectual development emerges somewhere between 18 and 36 months of age, with children in group day care programs functioning at a comparatively superior level" (pp. 6-7). The author does point out, though, that this difference, while

statistically significant, is a moderate one (7 points). This study, because of its focus on non-university center and family day care, will no doubt be a source of important data on comparisons between the two types of care. At the present time, however, it is impossible to draw any firm conclusions about the differential impact of various types of day care on the intellectual development of the child.

C. Daycare and Maternal Involvement

We pointed out previously that nearly all studies that report short-term gains in IQ show "wash-outs" of these gains after the program is terminated. One intriguing exception to this pattern is the study of Fowler and Khan (1974, 1975), which indicates that in a long-term program, the wash-out may take place even before the program is completed. The Griffith test scores of enrolled infants increased significantly from 11 until 37 months (from 107 to 114) but then declined to 100 by 59 months. The curve paralleled changes in maternal interest in the child's education. According to the authors, this finding suggests that prolonged enrollment in a day care program may ultimately reduce maternal involvement, in turn undermining any positive effects the program may have initially had. One feature of this program for very young infants may have contributed to the sudden decline in IQ scores: an extraordinarily high corr. to turnover rate. A similar pattern of decline in scores over the course of the program is found in the work of Deutsch et. al. (1971).

D. Functional Measures of Cognitive Development

Findings regarding outcomes on intellectual abilities other than those measured on standard intelligence tests are few in number and inconsistent as a group. Relying on measures based on naturalistic observations, Macrae and Herbert-Jackson (1975) report that early entry into day care is associated with

higher levels of problem solving, abstraction abilities, and planfulness, but Schwarz et al. (1974) report no differences on similar measures. The comparability of the two studies is questionable, though, since the entry ages and SES backgrounds were different in the two samples. In the sole long-term longitudinal study available (these children were followed until middle adolescence), Moore (1975, in press) reports that boys who were home reared until five years scored higher on reading tests at age seven than did their alternatively reared counterparts, but the author attributes this more to motivational and attitudinal differences than intellectual abilities, since the groups did not differ on any other cognitive measures at any time through adolescence.

Feine (no date) suggests that sophisticated vocalization is more characteristic of children raised in family day care than center care. The author attributes this difference to the greater amount of adult-child interaction in the former setting. Unfortunately, no information about the extent of this interaction or the adult-child ratio in either of the environments is reported, although Cochran (1976) reports data from Sweden consistent with Feine's interpretation (see below).

Having completed our review of evidence regarding the effects of day care on intellectual abilities assessed through observation rather than standardized tests, we wish to stress the need for further research in this area. It is clearly important to know whether children in day care learn functional skills applicable in everyday life, or whether they are simply being trained to take batteries of intelligence tests. It may be the case that seeing their parents engage daily in a variety of tasks

often in different settings contributes more to development of intellectual skills than does isolation from the everyday world in a center full of cognitively stimulating toys and puzzles. Some of Cochran's findings in Sweden point in this direction.

> Interactions between adults and child were occurring with considerably greater frequency and duration in the homes and day homes than in the centers, thus providing greater opportunity for socialization by significant adults. The interactions which distinguished homes from the centers were cognitive verbal (reading, labeling, face-to-face verbalizing) and exploratory in nature. The exploring in the homes involved a child playing with things not designed to be played with (plants, pots and pans, mother's lipstick, etc.). . . Where socialization practices differed from the homes and day homes to the centers, the differences involved frequency and focusing of negative sanctioning and restricting by the responsible adults. There were more instances where negative sanctions were applied in the homes than in the centers, and tnese instances often involved the exploring by the home or day home child of "no, no's" not available to children in the centers. (pp. 5-6)

In interpreting these results, Cochran rejects the emphasis on the importance of the biological mother, stressed by Ainsworth and Bell (1970) and others in favor of an ecological explanation in terms of

> the different roles performed by adults in the center and family settings. . . Caregivers are wives and neighbors as well as

> mothers at home, and the environment is organized accordingly. Friends and relatives are received in the home. It may be a display area for parents' prized possessions. Plants and flowers are often within reach. The child has access to the dishwashing detergent, the back stairs and the cat. Opportunities for exploration are more numerous in the homes, therefore, than in the centers, where the single role of the adult is child care and the setting is single purpose in design. (Cochran, 1976, p. 3)

Clearly, the understanding of any differences in outcome measures, will be considerably illuminated by knowledge of the contrasting roles and activities in home vs. center settings. Investigations of this type thus represent a significant advance over more conventional studies concerned only with data on the children themselves.

In sum, existing evidence warrants the conclusion that, so far as intelligence as measured by standardized tests is concerned, experience in day care programs meeting present Federal and State standards, has little positive or negative effect on most children. Programs which have been designed to enrich the environments of high-risk children do, however, appear to succeed in attenuating the declines in test scores typically associated with these disadvantaged populations. We have virtually no information regarding variations in type or quality of the day care experience and their effects on intellectual development and little evidence on how day care affects intelligence which is not measured by standardized tests. There is an urgent need to assess the impact of day care on functional intelligence in real-life settings.

2. The Mother-Child Relationship. Historically, the mother-child bond has been a prime focus of concern for those interested in the influence of early experience. On the basis of propositions derived from psychoanalytic theory and research on institutionalized children (e.g., Baer, 1954; Bowlby, 1951; Goldfarb, 1943; Spitz, 1945), the argument has been adduced that any arrangement in which the child is deprived of continuous access to the mother impairs the development of a strong maternal attachment, and, thereby, adversely affects the child's emotional security. If in fact day care involves such risks, then parents surely have the right to be informed. In general, research indicates that high quality day care does not have an adverse effect on the child's relationship with his or her mother.

A. Ecological Validity of the "Strange Situation" Experiment

In recent years, as the utilization of day care services has spread (Child Care Data and Materials, 1974), so has the number of scientific investigations concerned with this issue. The methodology employed in these studies to assess the quality of this mother-child relationship has usually involved variations of the "strange situation" experiment (Ainsworth & Wittig, 1969). This procedure involves creating a stressful situation by separating the child from his mother and/or introducing him to a strange adult. The child's approach-avoidance responses to the stranger and his mother, as well as his exploration of the environment, are recorded and then used as indices to characterize the quality of the mother-child relationship.

The warnings raised earlier regarding the ecological validity of procedures employed to measure the impact of day care are particularly a propos here. Consider first the term "relationship," which implies an enduring, generalized pattern of reciprocal feelings and acts that cut across both time

and setting. Consider next the artificial (and unmaternal) behavior required of the mother in this situation: she brings her youngster into an unfamiliar room in an equally unfamiliar building, seats herself in a chair reading a magazine, refrains from initiating any interaction, and then leaves her child alone a few moments later with a complete stranger who remains passive, responding only to the child's initiatives. A number of questions arise in relation to this procedure: Is such a situation likely to occur in the child's everyday life? Does such a situation actually serve to diagnose the quality of the child's enduring relationship with his mother? And, finally, are the child's reactions to these experimental procedures likely to tell us very much about his or her behavior in other settings?

B. Studies Examining the Effect of Day Care on the Mother-Child Relationship

Having flagged features of the research procedure that severely limit the generalizability of any conclusions drawn, we now proceed to review the available research. In this review we consider first investigations employing the "strange situation" experiment that have found reliable differences in attachment behavior between children reared in day care vs. at home. Next we shall review those researches that have employed this same methodology but have failed to discern reliable day care/home care differences. Finally, before drawing any conclusions regarding the impact of day care on the mother-child bond as measured by these artificial procedures, we shall discuss other research using somewhat different, though at times equally limited, methodologies to examine the relationship between type of care and the mother-child bond.

(1) Studies reporting differences in attachment to mother as a function of type of care: Blehar (1974), in a study of 40 children between two and

and four years of age from intact, middle class families reported the first and only data purporting to show that day care may adversely affect the child's relationship with his mother. Half of her sample had been enrolled for approximately five months in private day care centers. The remainder were reared at home. When compared in the "strange situation," the 40-month old day care children manifested "anxious-ambivalent" attachments to their mothers (less exploration prior to separation, more crying and more searching during separation, and more proximity seeking and resistance behavior to mother upon reunion) while 30 month olds manifested "anxious-avoidant" attachments (more resistance and avoidance behavior and less proximity-seeking during reunion).

Though the children were not randomly assigned to rearing condition, care was taken to match samples on sex, age, and social class; in addition, home environments were compared using Caldwell's Inventory of Home Stimulation, an instrument based on observations of mother-child interactions during a home visit and on the presence or absence of books, toys, or pets in the home. No differences were found between the two groups in total scores for the inventory or in any of its subscales. Moreover, no group differences were discovered on a Q-sort measure of maternal empathy and social sensitivity.

Before accepting Blehar's conclusions, however, it is imperative to examine the experimental procedures more closely, for the investigation is flawed by several methodological weaknesses. For example, the persons conducting most of the observations were aware of the children's group status and were not naive to the hypotheses of the study. Moreover, it is unclear

from the report whether the "strangers" employed in the experiment or the coders of the data were blind to the hypotheses and the subject's membership in the experimental vs. control group (Schwarz, 1975). That such flaws in the research design could result in confirmation of the experimenter's predictions is not difficult to imagine (Rosenthal, 1969).

Confirmation for these concerns is found in a recent attempt to replicate Blehar's results (Moskowitz, 1975; Moskowitz & Schwarz, 1976). Employing as subjects a group of 42-month-olds who had averaged 5 months in day care and matched home-reared controls, the investigators introduced changes in method designed to minimize the potential for experimental bias. Thus the experimenter, interviewers, strangers,and coders were all kept blind to the hypotheses of the study and the background of the children. In addition, the raters of social interaction scales, although aware of the research hypotheses, were ignorant of each subjects' group status.

In marked contrast to Blehar's findings, these researchers found that the home reared children, rather than the day care children, exhibited more distress upon separation from mother. Moreover, the two groups were indistinguishable in the behavior displayed toward mother prior to and after separation.

Although the differences in experimental procedures most likely account for the disparity between these two studies, it is quite possible that the children investigated differed in important respects, making the two researches incomparable. While 100% of Blehar's day care sample were from intact homes and 80% were first borns, the respective figures in the Moskowitz day care sample were 50% and 42%. As Moskowitz and Schwarz

themselves point out, the greater accessibility to mother prior to day care for first borns may have resulted in their greater aversiveness to separation and thus account for differences between studies. Since no investigators have examined the joint effects of birth order and day care on behavior in the strange situation, this post-hoc explanation must remain an unconfirmed hypothesis.

Two other researchers (Ricciuti, 1974, Study B; Cochran, 1976), working with children one year of age, have, like Blehar and unlike Moskowitz and Schwarz, reported greater distress reactions for day care than home-reared children during separation from the mother. In a study of children enrolled in an experimental nursery at Cornell University, Ricciuti attributed an observed difference in crying to a methodological artifact. Instead of being dropped off by mother in the day care nursery as is the usual procedure, for purposes of the experiment the day care children were left by their mothers in a strange room. In Ricciuti's view, the excess crying of the day care sample was probably a function of this incongruous experience rather than any disturbance in the children's maternal attachment.

In Cochran's (1976) Swedish study, separation procedures were conducted in the home rather than in the laboratory. In discussing his results, Cochran makes the important point that the similarities in behavior between groups far outweighed the observed differences in response to the Strange Situation. We believe that such examination of particular findings in broader perspective is essential. It seems ill advised, given the artificial nature of the investigatory procedures employed, to interpret

group differences on a single variable (in this case, crying upon separation) as evidence of a meaningful and functionally significant difference in psychological development.

In contrast to the results of the Riccuiti and Cochran investigations, and unpublished study by Doyle and Somers (no date) presents data indicating that home-reared infants cried more and played less during separation from mother than did their day care reared counterparts. Two points should be noted in considering the findings of this investigation. First, infants in this research averaged 22 months of age rather than twelve as in the Riccuiti and Cochran investigations. More importantly, the home- and day care-reared samples were not as carefully matched in this experiment as in the other studies mentioned.

In summary, the research purporting to show home/day care differences in the child's attachment to his/her mother is, at best, contradictory. Blehar's, Riccuiti's, and Cochran's data can be interpreted as evidence in favor of home-reared children; the Moskowitz and Schwarz and Doyle and Somers data, in contrast, show differences in favor of day care-reared children.

(2) Studies refuting differences in attachment to mother as a function of type of care: In addition to studies discerning differences between home- and day care-reared children employing the strange situation, there are a number of investigations, often using this same methodology, that have yielded negative findings. In this section, these studies will be reviewed. Unfortunately, it is not possible to separate researches in terms of age of subjects, since data for a wide age range of children are often presented together.

In the very first study aimed at examining the impact of day care on the child's relation with his mother, Caldwell et al. (1970) evaluated the attachment relationship in a sample of 41, 2 1/2 year olds, 18 of whom had been enrolled in a high quality, university-affiliated center from the time they were about a year old. Most of the subjects were from lower class famil The assessment consisted of child-mother attachment ratings on seven scales (e.g., dependency, hostility, nurturance, affiliation) made by a staff member after an intensive, semi-structured interview with the mother in which the child was present. When ratings for the day care sample were compared to those for 23 home-reared control children, no significant group differences were discerned. The results of this early investigation must be considered inconclusive, however, because of several methodological flaws (e.g., lack of construct validation of the ratings, unequal familiari with interview situation on the part of the two groups, use of maternal repor as main source of data).

In two more recent investigations employing the "strange situation," Brookhart and Hock (1976) (with 10-12 month olds), and Doyle (1975) (with 5-30 month olds) failed to discern day care-home care differences. The Brookhart and Hock study is of particular interest since it examined the effects of separation in the home as well as in the laboratory. Although there were no differences attributable to mode of rearing, main effects for setting were found suggesting that behavior observed in the laboratory cannot, as we have argued elsewhere (Belsky, 1976; Bronfenbrenner, 1976 , 197; be readily generalized to everyday life.

In the most recent and best controlled study to date, Kagan et al. (1976) compared 32 pairs of children matched for sex, ethnicity (Caucasian-Chinese) and social class (working-middle), half of whom enrolled in full-time care between the ages of 3 1/2 and 30 months. Again, the day care children in this study, like those in the Ricciuti and Caldwell researches, were cared for in a university-sponsored, research-oriented center, thus assuring a high caregiver-child ratio and a high quality of care. Periodic assessments made between the ages of 3 1/2 and 29 months indicated that children reared in home vs. day care did not differ in crying behavior when separated from the mother in a laboratory situation. In this study, however, unlike those using the standard "strange situation" procedures, no stranger was introduced to the child at any time during testing, thus creating a situation less stressful than those experienced by children in the other investigations.

When the crying data were plotted graphically, the similarity between home care and day care groups became even more striking. In fact, these crying curves were remarkably similar to those found for children in other cultures (Kagan, 1976). Such consistency across rearing conditions led Kagan et al. to conclude that separation anxiety may be more a function of maturational than experiential processes and thus inappropriate for studying the effects of day care on the child's attachment relationship.

(3) Studies of the caretaker-child relationship: In a number of investigations, an alternative approach has been taken to examine the impact of day care on the adult-child relationships. These alternative methods address rather different questions than those posed by investigators using the strange

situation to compare the child-mother attachments of day care- and home-reared children; namely, 1) Does the day care child develop an attachment-like relationship with his caregiver? and 2) Does the day care child become more attached to his caregiver than to his mother? Procedures aimed at finding answers to these questions have focused upon determining the child's preference for his mother, his caregiver, or a strange adult.

In a longitudinal study of children enrolled in the Cornell Experimental Nursery, Ricciuti (1974, Study A) explored both questions posed above. Monthly examinations of infants' responses to being left by their mother in the presence of a strange adult and/or a familiar caregiver provided evidence that infants can develop a discriminating attachment-like relationship toward the latter. Moreover, this relationship did not replace or supersede the child's emotional bond with his mother. The findings indicated that infants (1) expressed less distress when left by their mother with the familiar caregiver than with the stranger, (2) expressed negative reactions when left by caregiver with the stranger similar to, though not as strong as, those exhibited when left by mother with the stranger and (3) were substantially comforted following the caregiver's approach after having been left by the mother with the stranger.

Working with a sample of poor, black children, age 9-31 months, (albeit enrolled in a high quality, university sponsored center), Ramey and Farran (1975, 1976) drew conclusions somewhat similar to Ricciuti's though using a different methodology. Behavior recordings made when the day care children were placed in a laboratory setting with mother, caregiver, and strange adult, indicated that the children were more likely to interact

(e.g., offering toys, touching) with their mothers than with their caregiver. Moreover, when confronted with a problem-solving task of obtaining a cookie from a tightly sealed container, all 15 of the 23 children who requested help turned to their mothers for such assistance.

Kagan et al. (1976) used a somewhat similar procedure for comparing the adult preferences of day care- and home-reared children. Boredom and stress were built into a laboratory situation by providing few toys with which the child could play, and by directing the three adults in the room to switch seats twice during a 15 minute observation period. Once again, findings indicated that children, home-reared and day care alike, expressed strong preferences for their mothers.

Before drawing conclusions with respect to the impact of day care on the child's attachment to his mother, we should briefly note one other procedure utilized to compare the mother-child system of day care and non-day care children. Both Ramey and Mills (1975) and Falender and Heber (1976) have examined mother-child interaction patterns in the laboratory, the former in a relatively unstructured and the latter in a highly structured situation. Results from the Ramey and Mills investigation indicated that poor black mothers whose infants (age range 3 1/2 - 9 months) were enrolled in an experimental, university-affiliated nursery interacted more with their infants than did mothers of home-reared children. Of special interest here is the authors' suggestion that this difference was the result of the child's effect upon his caregiver, since day care children vocalized more and fussed less than home-reared children. Interestingly, Falender and Heber proposed a similar explanation to account for the greater

positive and lower negative feedback, relative to no-treatment controls, provided by mothers whose five-year-old children had been reared since approximately 6 months of age in a highly enriched, full day, center based program. It is of course possible that mothers in the experimental group may have been better informed about and more alert to those behaviors that "child experts" might like to see. Some evidence for this possibility comes from the Ramey and Mills study, which failed to discern any differences between home and day care groups when home environments were compared using Caldwell's Inventory of Home Stimulation. In fact, when data was gathered on a larger sample of subjects at 6 and 18 months of age, Ramey and his colleagues found, using the same procedures, that previously observed home/day care differences in maternal behavior could not be replicated (Farran, Ramey and Campbell, 1977).

(4) Overview and conclusions: In sum, the total corpus of evidence reviewed regarding the effect of day care on the child's attachment to his mother offers little support for the claim that day care disrupts the mother-child bond, at least as that bond is measured by somewhat unusual procedures conducted in unfamiliar settings with strange adults. With the exception of Blehar's (1974) report, not a single study provided evidence documenting the existence of substantial, systematic differences between day care and home reared children in behavior displayed in the "strange situation" or in some modified version of this procedure. And, given Moskowitz and Schwarz's (1976) failure to replicate Blehar's findings once rigorous experimental controls were included in the study design, one can only be left to question the validity, let alone the generalizability of this single exception to the general trend.

The absence of evidence for deleterious effects of day care in existing research does not mean, however, that no such effects occur. It is important to remember that most investigations reviewed (Kagan et al., 1976; Caldwell et al., 1970; Ricciuti, 1974; Ramey & Farran, 1975, 1976) involved children from day care programs hardly representative of those available to most parents; namely, centers run by universities for research purposes, and providing care of high quality. Given the prevalence of studies involving superior environments, effects of modal day care in America on the mother-child bond remain unknown. Nevertheless, we can conclude from the research reviewed that, given high quality day care, significant disruption of the mother-child bond (as measured by the "strange situation") does not appear likely. Nor is there any reason to conclude that the enrollment of infants in high quality day care leads to the replacement of the mother, by the caregiver, as the child's primary object of attachment.

One additional caution is in order. At the risk of repetition, we feel it necessary to re-emphasize our conviction that knowledge about day care, and thus any conclusions we draw from this knowledge, are limited by the nature and scope of the methods employed. In addition to their often artificial and even bizarre character, these methods may tell us little about the child's behavior in the real world. Although reports by Ainsworth (1972, 1973) do indicate some correlation between ratings of the child's reaction to the "strange situation," and the quality of the mother-child relationship in the home, there is some question about the degree of subjectivity that was involved in making the ratings. Hence, the issue remains in doubt.

Accordingly, we propose that future research on the effects of mode of care on adult-child relationships give major emphasis to systematic observations of child and mother, father, caregivers, families, and unfamiliar adults in real-life settings. Such methods, it might be added, at least with regard to mother and child, have been shown to predict child outcomes reliably (e.g., Clarke-Stewart, 1973).

(5) Special characteristics of families utilizing day care: Before concluding this section, we call attention to a recent unpublished report (Hock, 1976) providing information on a large sample of mothers who planned to work or not work during their child's first year of life. Factor analyses of responses to interviews and questionnaires throughout the first year revealed that mothers not interested in using day care services differed from mothers who did rely on such services in a number of psychological characteristics, including a stronger sense of control over the environment, greater feeling of irreplaceability in the maternal role, greater anxiety about separation from the baby, etc. Moreover, these differences in attitudes at the time of birth, and three and then eight months later, were positively correlated with the infant's resistive and affiliative behaviors toward a stranger in the "strange situation" experiment at 12 months. These results suggest, then, that before differences between day care and home reared samples are attributed to rearing conditions, characteristics of the child's family and enduring home environment be examined. It appears probable that such characteristics interact with, if they are not primarily responsible for, effects associated with parental vs. substitute care.

(6) Unresearched issues: Finally, there is a broad array of important questions on which we could find no research evidence whatsoever: How is the child's relationship with his mother affected by inconsistency of care pro-

vided at home vs. day care? Does day care influence the mother-child bond to the same extent and in the same way for children with one and two parents? Is the mother-child relationship affected similarly for children raised in middle class and working class homes? In large and small families? Or by working and nonworking mothers? And, as a last example, how do variations in type of day care (e.g., center vs. family day care) affect the mother-child bond in families with each of the above characteristics?

From an ecological perspective, all of the above questions apply not only with respect to the child's relation with his or her mother, but to other family members as well; i.e., father, younger siblings, older siblings, grandparents, etc. As we have said, there are, in this area, many unanswered questions of importance for science and social policy.

3. Social Development. Research on the effects of day care in this sphere is conveniently discussed under two headings: interaction with peers and the socialization of adult-like behaviors.

a. Interaction with peers. When a group of Massachusetts parents were asked to indicate their most important concerns regarding outcomes of substitute care, they most often replied that the program should help their children get along with others, a value which may be distinctive for American socialization (Bronfenbrenner, 1970a). In keeping with this emphasis, research on social outcomes of day care focuses principally on the relation of the child with his peers.

In general, studies of the peer relations of day care and non-day care children indicate that at early and later ages, there may be a tendency for day care children to be more peer oriented than

non-day care children, although a few investigators have not found this difference. In one set of studies, the child was placed in a play situation with his mother and one or more unfamiliar age-mates. The focus of attention was the extent to which the child was willing to leave the mother and initiate interaction with other children. In an experiment by Ricciuti (1974, Study D), day care infants exceeded matched home reared controls in the distance moved away from mother during the first two minutes of observation and in the distance they maintained throughout the experimental period. Moreover, the day care children were more visually oriented toward the other children, less so toward their mothers and engaged in less sustained physical contact with their mothers than their home reared counterparts. Ratings of general affective state (positive, negative, or neutral) revealed no differences between home and day care infants; both groups remained close to neutral.

Kagan et al, (1976) found that when mothers returned to a playroom in which their children were playing with a peer, home reared 20-month-olds show a greater increase in their proximity to their mothers than did their day care counterparts. These same authors report similar but non-significant trends at 29 months. Kagan et al., also used the situation employed by Ricciuti (1974, Study D) and found that home reared children were more apprehensive (played less with toys) than their day care counterparts but did not differ from them in proximity and visual orientation as Ricciuti reported. This discrepancy may be due to the fact that the children in the Kagan investigation were 4-8 months older than those studied by Ricciuti.

Cornelius and Denney (1975) note that the day care experience may eliminate the sex differences in proximity seeking behavior found in older home reared children. When a strange peer entered a room in which a 4 or 5 year old was playing in the presence of his mother, home reared boys remain further from their mothers than girls. No such sex difference was found, however, in a matched sample of day care children. These authors also report that the home reared and day care groups did not differ with regard to interaction with peers, that age of entry into day care did not differentiate children on proximity seeking behaviors with mother or peers.

These studies suggest that, at earlier ages (12-18 months), day care children in the presence of their mothers are more likely to look at and interact with peers than are matched home reared children. One exception to this is Doyle (1975) who reported that in a similar situation, day care infants (aged 5-30 months) were less likely to initiate both positive and negative interaction with a strange peer when their mothers were present, but this was the only significant comparison out of 37 variables and was not replicated (Doyle, personal communication). At later ages (after 2 years), differences in visual orientation and sheer proximity seeking may disappear, with the visual and, thereby, less advanced form of orientation diminishing before the latter. Finkelstein and Wilson (1977), for example, reported that when day care and non-day care children are brought together with their respective care-takers present, no differences in vocalizing, initiating interaction, or leading interactive play with peers were found.

But, children who have had a day care or preschool experience interact more with peers than do their home-reared counterparts at later ages. Moore (1975) notes that even at adolescence, boys who were enrolled in day care before the age of five years report higher concerns with social activities than do boys who were home-reared. When observed, these day care children rate higher in sociability with peers and are more often chosen by their peers as likeable.

b. Socialization of adult-like behaviors. The descriptions of social interactions of children with day care experience changes, however, when the person with whom the child is dealing is an adult, or when the behavior is evaluated from a perspective of social maturity as the child gets older.[4] Studies in this arena must be interpreted in light of the specific social values encouraged by particular program sponsors. We shall find, for the most part, that the social development of children in day care programs most often reflects the characteristically stressed American values of aggressiveness, impulsivity, and egocentrism.

The most comprehensive data in this sphere are reported in the latest (Schwarz et al., 1974)) of what is in effect a series of panel studies of the same sample at the Syracuse Children's Center (Caldwell et al., 1970; Lay & Meyer, 1973; Schwarz et al., 1973; Schwarz et al., 1974). These data consist of ratings of 19 matched pairs of three- to four-year-olds, on nine behavior scales four months after the children had been enrolled in a new day care center, and again four months later. This was the first

substitute care experienced by the home-reared youngsters, whereas the others had been in group care at another center since about nine months of age.

The two groups differed significantly on three of the nine scales. Most markedly, day care children exceeded their home-reared counterparts in aggression, both physical and verbal, whether toward peers or adults. They were also less cooperative in relation to grown-ups and engaged in more running about as against sitting in one place. An additional difference, significant at the ten percent level only, suggested greater tolerance for frustration on the part of home-reared children (as reflected in the ability to accept failure and to be interrupted). While the present investigation detected no difference between the groups in the ability to get along with peers, another observational study of what appear to be the same samples at about the same time (Lay & Meyer, 1973) indicated that the day care children interacted more with age-mates than adults, whereas, the opposite was true for the children who had been brought up at home. There were also indications that the children with prior day care experience (who had all been previously enrolled in the same center) exhibited more positive social interactions, and tended to socialize more with their own group. Finally, Lay and Meyer found that, compared with home-reared children, three- to four-year olds who had been in all day group care for most of their lives spent more time in the large muscle activity area of the center, and less in the expressive and cognitive areas. Macrae and Herbert-Jackson (1975), using scales similar to Schwarz's, found that early enterers got along better with peers and were equally cooperative with adults. On the basis of these findings they suggested

that the effects of day care may actually be program specific. Although reasonable, this argument does not seem to be appropriate since all of the subjects in the Macrae and Herbert-Jackson research would have been classified as early enterers in Schwarz's study, so that any direct comparison is impossible.

Evidence consistent with the results of the Syracuse investigations comes from a number of sources. McCutcheon and Calhoun (1976) report that the increased interaction with peers found in their day care sample was accompanied by a decrease in interaction with adults. On a broader scale, Moore (1964) found that children who had experienced substitute care before age five were significantly more self-assertive, less conforming, less impressed by punishment, less averse to dirt and more prone to toilet lapses than a home-care group equated on a number of demographic variables.

Other, partially supportive data come from an observational study by Raph et al. (1964) of 97 middle and upper class first graders in New York City. These investigators found that negative interactions toward teachers (but not toward peers) varied directly with the amount of prior exposure to group experience in nursery and kindergarten (ranging from one to three years).

In a similar vein, Lippman and Grote (1974), in a matched sample of 198 four-year olds cared for in licensed day care centers, licensed family day care homes, and own families, assessed cooperative behavior in two games in which children from similar day care arrangements were paired as partners. In the first game, requiring spontaneous help to open a box with four spring latches, there were no significant differences by type of care. In the second, involving a choice of a cooperative vs. competitive strategy in playing marbles, the home-reared

children were more likely to use the winning strategy of taking turns.

Finally, results consistent with the foregoing trends were reported in the observational study by Prescott (1973). Instances of rejection and frustration were observed significantly more often among children in all-day group settings than among those in full-time family day care or half-time nursery-home combinations.

Schwarz et al. (1974), in the light of their own findings and those from most of the other studies cited above, are led to conclude that "early day-care experience may not adversely affect adjustment with peers but may slow acquisition of some adult cultural values " (p.502). In our view, the evidence points to a more delimited conclusion. First, while there are central tendencies, there are also variations from program to program. For example, as Datta (1969) has pointed out, children are rated higher on social adjustment by their teachers in programs that stress goals of social development. Stating the issue more generally, like all social or educational efforts, day care programs are likely to reflect, and in some measure achieve, the values held explicitly or implicitly by their sponsors, and, through them, by the community at large.

From this perspective, the tendency we have observed for all-day group care to predispose children toward greater aggressiveness, impulsivity, and egocentrism may represent a phenomenon specific to American society, for these outcomes have been identified as characteristic of socialization in age-segregated peer groups in America

generally (Bronfenbrenner, 1967, 1970a, 1970b; Garbarino & Bronfenbrenner, 1976; Kav Venaki et al., 1976; Shouval et al., 1975).

That the phenomena may indeed be culture bound is indicated by the above cited comparative studies of peer group socialization in the USA, USSR, Israel and other contemporary societies, which show that, depending on the goals and methods involved, group upbringing can lead to a variety of consequences, ranging from delinquency and violence at one extreme to unquestioning conformity at the other (e.g., Sherif, 1958). The trends revealed in existing research suggest that peer groups in the United States, while far from either pole, are closer to the former than the latter end of the continuum. In light of these findings, a re-examination of current practices in group day care is clearly indicated.

4. Effects of Day Care on the Family. To a great extent, research on the impact of day care has focused solely upon the child experiencing that care. We have argued earlier that the effects of day care need to be considered more from an ecological perspective. Such a perspective would include questions regarding the influence of day care on parents, siblings, the family, the school, the community, the society, etc. In reviewing the research on day care, we have uncovered a few investigations that have shown, by the issues they addressed, an appreciation for this perspective. These researches have been primarily concerned with examining the impact of day care on the family and are considered important not so much for any definitive answers they provide, but for their significant contribution of expanding our focus regarding the impact of day care.

These investigations concerned with the impact of day care on the family have adopted one of three research strategies. The first consists of examining characteristics of day care families that change over time as a function of the child's experience in day care. A second design compares families using day care with a matched sample rearing their children at home. The third approach examines differences in day care families as a function of length of exposure to day care. Research employing each of these three strategies shall be considered in turn.

Fowler and Khan (1974, 1975) were interested in examining the changes in family home environments of children enrolled in their cognitively-oriented day care center early in the first year of life. On the basis of data collected periodically, these researchers concluded that the parental guidance component of their project achieved some success: over a four year period a marked increase was observed in the percentage of families scoring above average on Caldwell's Inventory of Home Stimulation (10%-40%). It is important to note, however, that mean scores present a somewhat different picture. Following enrollment in the program, scores on the inventory tended to increase between the ages of 11 and 18 months but decrease thereafter to a point below the initial mean by 44 months of age. Paralleling this trend, scores decreased on particular items of Schaeffer and Aaronson's Maternal Inventory that reflect the mother's interest in her child's education and her positive attitude toward her child. These results would seem to raise

serious questions, some noted by the authors themselves, regarding the impact of the project on parents and children. Indeed, the findings can be interpreted to mean that enrollment in full-time day care for extended periods of time beginning early in the first year may lead mothers to lose interest in their children. The possibility that such an outcome could be detrimental to the child in the long run cannot be dismissed. In fact, data reported in a previous section dealing with the cognitive development of these children (p. 26) indicates that the performance on tests of intellectual development paralleled these trends in home environment and maternal involvement scores—rising from 11 to 37 months then declining through 59 months.

Ramey and Mills (1975, 1976) conducted a study to compare mother-infant interaction patterns between a group of high risk infants (age 3 1/2 - 9 months) who had been enrolled in an experimental nursery since the age of 3 months and a home reared control group matched in age, race, SES, and maternal IQ. Findings from this study are considered important because subjects were randomly assigned to treatment condition. Behavior recordings made during an unstructured laboratory situation indicated that mothers of day care children interacted more with their infants than did the control mothers. Ramey and Mills suggest that this difference was a function of the child's effect on the caregiver since day care children vocalized more and fussed less than home-reared children. Questions must be raised regarding the generalizability of these findings regarding maternal behavior, however, since no differences were detected in mean scores on Caldwell's inventory, which provides a general measure of the quality of the child's home and includes observations of mother-

child interaction. A follow-up study of a larger sample of children at 18 months of age did reveal, though, significant differences on two of six scales on Caldwell's Inventory, suggesting that day care may indeed influence the home environment. Specifically, mothers of day care children were rated as warmer and their homes were judged to be more organized than mothers of home reared controls (Farran, Ramey, & Campbell, 1977).

Falender and Heber (1976) also conducted a study of mothers' interaction with their five-year-old children in order to determine whether a full-day, long-term program for high risk youngsters had affected the mothers' behavior. In comparison to matched controls, mothers of the day care children were observed to offer more positive and less negative feedback to their children during a structured laboratory task adapted from Hess and Shipman (1965). Two points are important in evaluating these findings. The first is that Heber's program included a maternal rehabilitation component. The second is that the behavior exhibited by these "trained" lower class mothers was remarkably similar to that displayed by middle class mothers in Hess and Shipman's early study, which attempted to explain academic differences between middle and lower class children in terms of social class differences in maternal interaction styles. If, as Hess and Shipman suggest, social class differences in maternal behavior account for social class differences in school performance, Heber's maternal rehabilitation program may have provided these mothers with the tools to promote school achievement in their offspring. We counsel a cautious acceptance of this possibility since it is conceivable, as noted earlier, that the experimental mothers have simply learned to display, in a laboratory, in front of child experts, an interactive style that is not employed under everyday circumstances at home.

Lally (1973) evaluated the effect of his day care program on the family by comparing the number of high school diplomas earned by mothers of day care children and home reared children. We should note here that in addition to providing these poor families with day care, a wide array of family support services was also made available. Although families were not randomly assigned to treatment, careful matching was done of control and experimental children included in the design. After 2 1/2 years of the program, 40% of the experimental mothers and 20% of the control mothers had earned diplomas; this difference was statistically significant.

The final research to be reviewed was conducted as part of a larger study of day care in the state of Pennsylvania (Peters, 1973). Elliott (1973) compared the rates of maternal employment and median family incomes of families with children enrolled in day care with those of families whose names were on waiting lists of day care centers. As might be expected, given a primary motivation for enrolling children in day care, the rate of maternal employment was greater in the day care group than in the waiting list group. Probably as a result of this difference, the two groups differed in median monthly income, with day care families earning the greater amount of money ($643 vs. $497).

As part of the Pennsylvania study, two additional investigations were conducted aimed at examining how satisfaction with substitute care was related to marital satisfaction (Meyers, 1973) and maternal satisfaction with employment (Harrell, 1973; Harrell & Ridley, 1975). As might be predicted, marital and employment satisfaction increased as a function of satisfaction with substitute care.

As suggested earlier, these few studies are important because they represent a step in the right direction, a step toward examining the impact of day care upon the larger system in which the child lives and grows.

Footnotes

[1]Henceforth cited as TNPCF, 1976.

[2]A recent U. S. Census report (U. S. Bureau of the Census, 1976) provides the first reliable estimate of the numbers of such children. In a current population survey, parents were asked to describe day care arrangements for their children. The alternative "child cares for self" was applied to a total of 1.8 million children between 3 and 13 years of age, constituting 4.3% of all the children in this age bracket. The total is significantly greater than previous estimates of approximately 1 million (TNPCF, 1976).

[3]Early studies of the impact of nursery school attendance conducted during the 1930's, 1940's, and 1950's are not included in the present review. For a comprehensive review of this literature, see Sjolund (1973).

[4]One cannot help feeling both frustrated and disappointed after reading a number of studies which attempt to contrast home care and day care children on a number of social "traits" which have been assessed by teachers, experimenters, parents, and all too often, persons whose identities (and hence, biases) remain a mystery. Substantial description of the rating scales or questionnaires employed is rarely offered; neither are accurate descriptions of the settings and circumstances in which assessments were made. Moreover, due to the dearth of across-setting and between-rater comparisons, it is virtually impossible to determine whether an experimenter who uses a one-shot social development inventory is tapping real differences between children (which of course he or she is wont to believe) or, just as likely, differences in raters' perceptions reflecting their biases regarding the social background of the children being evaluated. This is not to belittle the importance of such attitudinal differences, for, when shared by others in the child's environment, such as teachers or social workers, they can have significant impact on the child's family and the child himself. Given these difficulties, we have included in our review only studies in which ratings were made of specific behaviors by raters whose identity was reported.

References

Ainsworth, M. D. S. Attachment and dependency: A comparison. In J. Gerwitz (Ed.), Attachment and dependency, 1972. Winston & Sons, Inc.

Ainsworth, M. D. S. The development of mother-infant attachment. In B. Caldwell & H. Ricciuti (Eds.), Review of Child Development Research, (Vol. 3). Chicago: University of Chicago Press, 1973.

Ainsworth, M. D. S. & Bell, S. M. V. Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. Child Development, 1970, 41, 49-67.

Ainsworth, M. D. S. & Wittig, B. A. Attachment and exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), Determinants of infant behavior (Vol. 4). London: Methuen, 1969.

Baer, M. Women workers and home responsibilities. International Labor Review, 1954, 69, 338-355.

Baratz, S. S. & Baratz, J. C. Early childhood interventions: The social science base of institutional racism. Harvard Educational Review, 1970, 40, 29-49.

Belsky, J. Home and laboratory: The effect of setting on mother-infant interaction. Unpublished manuscript, Cornell University, 1976.

Blehar, M. Anxious attachment and defensive reactions associated with day care. Child Development, 1974, 45, 683-692.

Bowlby, J. Maternal care and mental health. Geneva: World Health Organization, 1951.

Bronfenbrenner, U. Response to pressure from peers versus adults among Soviet and American school children. International Journal of Psychology, 1967, 2, 199-207.

Bronfenbrenner, U. Two worlds of childhood: U.S. and U.S.S.R. New York: Russell Sage Foundation, 1970. (a)

Bronfenbrenner, U. Reaction to social pressure from adults versus peers among Soviet day school and boarding school pupils in the perspective of an American sample. Journal of Personality and Social Psychology, 1970, 15, 179-189. (b)

Bronfenbrenner, U. Is early intervention effective? A report on longitudinal evaluations of preschool programs (Vol. 2). Washington, D.C.: Department of HEW, Office of Child Development, 1974.

Bronfenbrenner, U. Reality and research in the ecology of human development. Proceedings of the American Philosophical Society, 1975, 119, 439-469.

Bronfenbrenner, U. Research on the effects of day care on child development. Toward a national policy for children and families. Report of the Advisory Committee on Child Development. Washington, D.C.: National Academy of Sciences/National Research Council, 1976, Appendix A.

Bronfenbrenner, U. Toward an experimental ecology of human development. American Psychologist, July 1977.

Brownlee, M. A comparison of the psychological development of children with group and family infant day care experience and children reared at home for the first three years of life. Paper presented at the meeting of the Society for Research in Child Development, New Orleans, 1977.

Brookhart, J., & Hock, E. The effects of experimental context and experiential background on infant's behavior toward their mothers and a stranger. Child Development, 1976, 47, 333-340.

Caldwell, B. M., Wright, C. M., Honig, A. S., & Tannenbaum, J. Infant care and attachment. American Journal of Orthopsychiatry, 1970, 40, 397-412.

Campbell, F., & Ramey, C. The effects of early intervention on intellectual development. Paper presented at the meeting of the Society for Research in Child Development, New Orleans, 1977.

Child Care Data and Materials. Committee on Finance, United States Senate (Committee print). Washington, D.C.: U. S. Government Printing Office, 1974.

Clarke-Stewart, K. A. Interactions between mothers and their young children: Characteristics and consequences. Monographs of the Society for Research in Child Development, 1973, 38, (6-7, Serial No. 153).

Cochran, M. A comparison of group day care and family child rearing patterns. Unpublished manuscript, Cornell University, 1976.

Collins, A. H. Normal delivery systems: Accessible sources of power for mental health. American Journal of Orthopsychiatry, 1973, 43(1), 46-52.

Cornelius, S., & Denney, N. Dependency in day care and home care children. Developmental Psychology, 1975, 11, 575-582.

Datta, L. A report on evaluation studies of Project Head Start. Paper presented at the meetings of the American Psychological Association, Washington, D.C., 1969.

Deutsch, M. et al. Regional research and resource center in early childhood: Final report. Washington, D.C.: U. S. Office of Economic Opportunity, 1971.

Doyle, A. Infant development in day care. Developmental Psychology, 1975, 11, 655-656.

Doyle, A., & Somers, K. The effects of group and family day care on infant attachment. Manuscript submitted for publication.

Doyle, A. Personal communication, May 1977.

Elliott, V. Impact of day care on economic status of the family. In D. Peters (Ed.), A summary of the Pennsylvania Day Care Study, June 1973.

Emlen, A., Donoghue, B., & Clarkson, O. The stability of the family day care arrangement: A longitudinal study. Corvallis, Oregon: Oregon State University Printing Department, 1974.

Falender, C., & Heber, R. Mother-child interaction and participation in a longitudinal program. Madison, Wisc.: Rehabilitation Research and Training Center, 1976.

Farran, D., Ramey, C., & Campbell, F. Social interactions of mothers and young children: Implications for development. Paper presented at the meeting of the Society for Research in Child Development, New Orleans, 1977.

Feine, R. J. The differential structural characteristics of sentences formed by preschool children in family and group day care centers. Unpublished manuscript, no date.

Finkelstein, N., & Wilson, K. The influence of day care on social behaviors towards peers and adults. Paper presented at the meeting of the Society for Research in Child Development, New Orleans, 1977.

Fowler, W., & Khan, N. The development of a prototype infant and child day care center in metropolitan Toronto, #1 year III Progress Report, December 1974; #2 year IV Progress Report, December 1975.

Garbarino, J., & Bronfenbrenner, U. The socialization of moral judgment and behavior in cross-cultural perspective. In T. Lickona (Ed.), Morality: A handbook of moral development and behavior. New York: Hont, Rinehart, & Winston, 1976.

Golden, M., & Birns, B. Social class and infant intelligence. In M. Lewis (Ed.), Origins of intelligence. New York: Plenum Press, 1976.

Goldfarb, W. The effects of early institutional care on adolescent personality. Journal of Experimental Education, 1943, 12, 106-129.

Harnischfeger, A., & Wiley, D. E. Achievement test score decline: Do we need to worry? Chicago: CEMREL, Inc., 1975.

Harrell, J. Substitute child care, maternal employment and the quality of mother-child interaction. In D. Peters (Ed.), A summary of the Pennsylvania Day Care Study, June 1973.

Harrell, J., & Ridley, C. Substitute child care, maternal employment and the quality of mother-child interaction. Journal of Marriage and the Family, August 1975, 556-565.

Heber, R., Garber, H., Harrington, D., Hoffman, C., & Falender, C. Rehabilitation of families at risk for mental retardation. Madison, Wisconsin: Rehabilitation Research and Training Center in Mental Retardation, University of Wisconsin, 1972.

Hess, R., & Shipman, V. Early experience and the socialization of cognitive modes in children, Child Development, 1965, 36, 869-886.

Hock, E. Alternative approaches to child rearing and their effects on the mother-infant relationship. Final report. Washington, D.C.: Department of HEW, Office of Child Development, Grant No. OCD-CB-490, 1976.

Kagan, J. Emergent themes in human development. American Scientist, 1976, 64, 186-196.

Kagan, J., Kearsley, R., & Zelazo, P. The effects of infant day care on psychological development. Paper presented at the American Association for the Advancement of Science, Boston, Mass., February 1976.

Kav Venaki, S., Eyal, N., Bronfenbrenner, U., Kiely, E., & Caplan, D. The effect of Russian versus Hebrew instructions on the reaction to social pressure of Russian-born Israeli children. Journal of Experimental Social Psychology, 1976, 12, 70-86.

Kayserling, M. D. Windows on day care. New York: National Council of Jewish Women, 1972.

Kohn, M. Social class and parent-child relationships: An interpretation. American Journal of Sociology, 1963, 68, 471-480.

Lally, R. The family development research program. Progress Report. February 1973. Syracuse University.

Lally, R. The family development research program. Progress Report. 1974. Syracuse University.

Lay, M., & Meyer, W. Teacher/child behaviors in an open environment day care program. Syracuse, NY: Syracuse University Children's Center, 1973.

Lewis, M. Infant intelligence tests: Their use and misuse. Human Development, 1973, 16, 108-118.

Lewis, J. Family development center: A demonstration project, 1975.

Lippman, M. A., & Grote, B. H. Socio-emotional effects of day care: Final project report. Bellingham, Wash.: Western Washington State College, 1974.

Mccrae, J. W. & Herbert-Jackson, E. Are behavioral effects of infant day care program specific? Developmental Psychology, 1975, 12, 269-270.

McCutcheon, B., & Calhoun, K. Social and emotional adjustment of infants and toddlers to a day care setting. American Journal of Orthopsychiatry, 1976, 46, 104-108.

Meyers, L. The relationship between substitute child care, maternal employment and female marital satisfaction. In D. Peters (Ed.), A summary of the Pennsylvania Day Care Study, June 1973.

Moore, T. Children of full-time and part-time mothers. International Journal of Social Psychiatry, Special Congress Issue #2, 1964, 1-10.

Moore, T. Stress in normal childhood. Human Relations, 1975, 22, 235-250.

Moore, T. Exclusive early mothering and its alternatives: The outcome to adolescence. Scandinavian Journal of Psychology, in press.

Moskowitz, D. Effects of day care experience on attachment and exploratory behavior. Unpublished master's thesis, University of Connecticut, 1975.

Moskowitz, D., & Schwarz, J. C. Effect of day care experience on three-year-old children's attachment behavior. Paper presented to the Eastern Psychological Association, New York, April 1976.

National Childcare Consumer Study: 1975. Washington, D.C. Department of HEW, Office of Child Development, Contract #105-74-1107.

Peters, D. A summary of the Pennsylvania Day Care Study. University Park, Penn.: Pennsylvania State University, June 1973.

Prentice, N., & Bieri, J. Intellectual development of culturally deprived children in a day care program: A follow up study. Paper presented at the American Orthopsychiatric Association. San Francisco, March 1970.

Prescott, E. A comparison of three types of day care and nursery school-home care. Paper presented at the Society for Research in Child Development, Philadelphia, 1973.

Ramey, C., & Farran, D. Infant day care and attachment behaviors toward mothers and teachers. Paper presented at the American Psychological Association, Chicago, August 1975.

Ramey, C., & Farran, D. Infant day care and attachment behaviors toward mothers and teachers, revision of Chicago APA paper. Unpublished manuscript, University of North Carolina, 1976.

Ramey, C., & Mills, J. Mother-infant interaction patterns as a function of rearing conditions. Unpublished manuscript, University of North Carolina, 1975.

Ramey, C., & Mills, J. Social and intellectual consequences of day care for high risk infants. In R. Webb (Ed.), Social development: Family and group experience. Baltimore, MD: Johns Hopkins University Press, in press.

Ramey, C., & Smith, B. Learning and intelligence in disadvantaged infants: Effects of early intervention. Paper presented at the Council on Exceptional Children, 1976.

Raph, J. B., Thomas, A., Chess, S., & Korn, S. J. The influence of nursery school on social interactions. Journal of Orthopsychiatry, 1964, 38, 144-15 144-152.

Ricciuti, H. Fear and development of social attachments in the first year of life. In M. Lewis & L. A. Rosenblum (Eds.), The origins of human behavior: Fear. New York: John Wiley and Sons, Inc., 1974.

Riegel, K. F. Subject-object alienation in psychological experiments and testing. Human Development, 1975, 18, 181-193.

Robinson, H., & Robinson, N. Longitudinal development of very young children in a comprehensive day care program: The first two years. Child Development, 1971, 42, 1673-1683.

Rosenthal, R. Interpersonal expectations: Effects of the experimenter's hypothesis. In R. Rosenthal & R. Rosnow (Eds.), Artifact in behavioral research. New York: Academic Press, 1969.

Saunders, M., & Keister, M. E. Family day care: Some Observations. Unpublished manuscript, University of North Carolina, Greensboro, 1972.

Saunders, M. Some aspects of the effects of day care on infant's emotional and personality development. Unpublished doctoral dissertation, University of North Carolina, 1972.

Schwarz, J. C. Effect of day care experience on aspects of young children's personality and social development. Research proposal submitted to the Foundation for Child Development, New York, 1975.

Schwarz, J. C., Krolick, G., & Strickland, R. G. Effects of early day care experience on adjustment to a new environment. American Journal of Orthopsychiatry, 1973, 43, 340-346.

Schwarz, J. C., Strickland, R. G., & Krolick, G. Infant day care: Behavioral effects at preschool age. Developmental Psychology, 1974, 10, 502-506.

Sherif, M. Superordinate goals in the reduction of intergroup conflict. American Journal of Sociology, 1958, 43, 349-356.

Shouval, R., Kav Venaki, S., Bronfenbrenner, U., Devereux, E. C., & Kiely, E. Anomalous reactions to social pressure of Israeli and Soviet children raised in family versus collective settings. Journal of Personality and Social Psychology, 1975, 32, 477-489.

Sibbison, V. H. The influence of maternal role perceptions on attitudes toward and utilization of early child care services. In D. Peters (Ed.), A summary of the Pennsylvania Day Care Study, June 1973.

Sjolund, A. Day care institutions and children's development. Lexington, Mass.: Lexington Books, D. C. Heath and Co., 1973.

Spitz, R. A. Hospitalism: An inquiry into the genesis of psychiatric conditions in early childhood. Psychoanalytic Study of the Child, 1945, 1, 53-74.

Sroufe, L. A. A methodological and philosophical critique of intervention-oriented research. Developmental Psychology, 1970, 2, 140-145.

Toward a national policy for children and families. Report of the Advisory Committee on Child Development. Washington, D.C.: National Academy of Sciences/National Research Council, 1976.

Tulkin, S. R. An analysis of the concept of cultural deprivation. Developmental Psychology, 1972, 6, 326-339.

U. S. Bureau of the Census, Current Population Reports, Series P-20, No. 268, August, 1974. Washington, D.C.: U. S. Government Printing Office, 1974.

U. S. Bureau of the Census, Current Population Reports, Series P-30, No. 298, "Daytime Care of Children: October 1974 and February 1975." Washington, D.C.: U. S. Government Printing Office, 1976.

Winett, R. A., Fuchs, W. L., & Moffatt, S. An evaluative study of day care and non-day care children and their families. Unpublished manuscript, University of Kentucky, 1974.